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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/689,593 | 10/22/2003 | Kazuyuki Yamamoto | SON-2848 | 6366 |

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| EXAMINER | |
|---|---|
| CAO, ALLEN T | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2652 | |

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/689,593 | YAMAMOTO ET AL. | |
| | Examiner | Art Unit | |
| | Allen T. Cao | 2652 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 4-5 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "can" in claim 4, lines 3 and 5; and "cannot" in claim 10, line 3 are vague and indefinite because its lack metes and bounds of the claimed invention.

2. Figures 10A-11 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. Claims 4-5 and 7 are objected to because of the following informalities:

The term "surfaces" of the phrase "said positive pressure generating surfaces" in claim 4, line 2; claim 5, line 2; and in claim 7, line 2 should be changed to –surface—for avoiding lacking of antecedent basis.

Appropriate correction is required.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4 and 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al (US. 2002/0001157 A1) in view of Kohira et al (US. 6,628,480).

Kang et al discloses a flying head slider that is incorporated in a disk storage apparatus, which records and reproduces information to and from a disk-shaped storage medium, wherein a face of said flying head slider, which faces said storage medium, comprises three types of surfaces, which are a positive pressure generating surf ace (surface 320); a step 380 that has a lower height than said positive pressure generating surface; and a recess 340 that has a lower height than said step; wherein said positive pressure generating surface comprises a substantially U-shaped leading pad 310 that comprises ay least one projection on an air inflow side and is positioned at a front part of said slider; two side pads 370 that are positioned behind said leading pad and to the right and the left side; and a center pad 330 that comprises a recess 322 on the air inflow side and is positioned between said two side pads and behind said leading pad; said step comprises a leading step 380 that extends from a front edge of said leading pad to a front edge of said slider; two side steps 381 that **"extend"** from the behind of said leading pad and to the right and the left and to connect to said two side pads, respectively; and a center step 382 that comprises a projection on the air inflow side and extends forward from a front edge of said center pad; said recess is formed at the peripheries of said center pad and of said center step, which are surrounded by said leading pad and said side steps; said side steps extend from side parts of said side pads to the side edges of said slider; form a width of said leading pad narrower than a total width of said slider; said side steps are wider at the rear; the rear edge of said

center pad are positioned further behind the rear edges of said side pads; and a head 26 is positioned near the rear edge of said center pad, as set forth in claims 1 and 9. Kang et al also discloses that the side portions of the leading step extend from side parts of the leading pad to the side edges of said slider.

Kang et al does not disclose that the leading step and the side steps are joined at the side parts of the slider.

Kohira et al discloses a head slider having a leading pad 6; side pads (9, 10); center pad 12; steps (5, 7-8 and 13); and a recess 11; wherein the leading step 5 and side steps (7, 8) are joined at the side parts of the slider as recited in claims 1 and 9.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the head slider of Kang et al with that the leading step and side steps are joined at the side parts of the slider as set forth, supra as taught by Kohira et al.

The rationale is as follows: One of ordinary skill in the art would have been motivated to modify the head slider of Kang et al with that the leading step and side steps are joined at the side parts of the slider as set forth, supra as taught by Kohira et al to maintain equal, uniform and continuous over the magnitude levitation of the step of the leading step and the side steps to lowering effect of the flying height in the positive pressure surface, thus to improve flying height balancing characteristics of the head slider.

Regarding claim 2, Kang et al disclose that the two side pads comprise projections on the air inflow side.

Regarding claim 3, Kang et al discloses that the two side pads comprise recesses on the air inflow side.

Regarding claim 4, Kang et al discloses that contour parts of the positive pressure generating surface [SIC: surfaces], which can be on an air outflow side with a range of skew angles of use, are directly connect and fall to said recess, without said steps in between, except at areas that can also be on the air inflow side and are connected to said side steps.

Regarding claim 6, Kang et al discloses that the leading pad is thickest at a center part and becomes gradually narrower toward both ends.

Regarding claim 7, Kang et al discloses that the positive pressure generating surface, steps and recess are symmetrical with respect to a center line of a longitudinal direction of the slider.

Regarding claim 8, Kang et al discloses that the leading pad is split into two parts in a width direction of the slider.

Regarding claim 10, Kang et al discloses that the disk storage apparatus is a fixed type hard disk drive, wherein the storage medium is incorporated and cannot be removed.

Regarding claim 11, Official Notice has been taken that the head slider can be used in a disk storage apparatus which is a removable heard disk drive, wherein the storage medium is stored in a cartridge and is attached in a removable manner (for example: see Arai et al (US 6,747,844) and Zeng et al (US. 6,735,051)).

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-11 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Yamamoto et al (US. 1003/0214756 A1)

The applied reference has a common assignee and inventors (not same all inventors) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

See figures 1 and 10A-12.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen T. Cao whose telephone number is (571) 272-7569. The examiner can normally be reached on Mon - Thurs (7:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Allen Cao
Primary Examiner

AC
June 6, 2005